

### **REMARKS**

Applicants respectfully request that the above application be reconsidered, in view of the following remarks. Claims 1-2, 6-12, 16-25, and 28 are currently pending.

Claims 1, 8 and 21 have each been amended to recite a zirconia-containing ceramic composition or thermal barrier coating comprising: from about 5 to about 8 mole % of a stabilizer component comprising: (a) yttria in an amount of from about 4 to about 6 mole %; and (b) lanthana in an amount of from about 0.8 to about 2 mole %; wherein the composition/thermal barrier coating has a mole % ratio of lanthana to total stabilizing component of from about 0.15 to about 0.35. Support for these amendments can be found in paragraph [0021] at page 5 and in paragraph [0028] at page 8 of the above application, as well as Claims 5, 15 and 27 (now cancelled).

In view of the amendments to Claims 1, 8 and 21, the language of Claims 2, 6, 12, 16 and 24-25 have been amended accordingly. In addition, Claims 6, 16 and 25 have each been amended to recite that the composition/thermal barrier coating comprises from about 5.5 to about 6.5 mole % stabilizing component. Support for these amendments can be found in paragraph [0028] at page 8 of the above application. Claim 16 has been further amended to change dependency from Claim 15 (now cancelled) to Claim 11, while Claim 28 has been amended to change dependency from Claim 27 (now cancelled) to Claim 25.

**A. Response to Rejection of Claims 1-2, 4-12, 14-18 and 21-28 under 35 U.S.C. § 102(b) as Anticipated by Bruce**

At page 2 of the Office Action, Claims 1-2, 4-12, 14-18 and 21-28 have again been rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent Application 2003/0224200 (Bruce).

Responsive to this rejection, Claims 1, 8 and 21 have each been amended to recite that the zirconia-containing ceramic composition or thermal barrier coating comprises: from about 5 to about 8 mole % of a stabilizer component comprising: (a) yttria in an amount of from about 4 to about 6 mole %; and (b) lanthana in an amount of from about 0.8 to about 2 mole %; wherein the composition/thermal barrier coating has a mole % ratio of lanthana to total stabilizing component of from about 0.15 to about 0.35. See also Claims 6, 16 and 25 which have been amended to

recite that the composition/thermal barrier coating comprises from about 5.5 to about 6.5 mole % stabilizing component, yttria in an amount of from about 4 to about 5 mole %, and lanthana in an amount of from about 0.8 to about 1.5 mole %.

The composition, article and method of amended Claims 1-2, 6-12, 16-25, and 28 are distinguishable over Bruce. Bruce discloses fairly broad ranges for lanthana addition of up to 5 weight % to improve the impact resistance of yttria-stabilized zirconia at levels of yttria that can also broadly range up to about 10 weight %. See paragraph [0017] at page 2 and [0023] at page 3 of Bruce. In fact, the only lanthana-containing yttria-stabilized zirconias specifically exemplified in Bruce comprises from about 0.07 to about 0.90 weight % lanthana, and from about 3 to about 4 weight % yttria. See paragraph [0019] at page 3 of Bruce.

By contrast, amended Claims 1-2, 8-12, and 18-24 now define specific mole % ranges for lanthana and yttria above those specifically exemplified in paragraph [0019] at page 3 of Bruce. In fact, the Office Action concedes at page 3 that “Bruce does not give specific examples falling within the claimed range” with regard to the amounts of lanthana and yttria present in the zirconia-containing composition. In addition, amended Claims specify particular mole % ratios of lanthana to total stabilizing component that are nowhere taught in Bruce. See, for example, Claims 1, 8 and 21 (ratio from about 0.15 to about 0.35), as well as Claims 7, 17 and 28 (ratio of from about 0.2 to about 0.3).

Pages 3-4 of the Office Action again refer to a “composition comprising 90 wt% zirconia, 7 wt% yttria, and 3 wt% lanthana” that is alleged to correspond to “94.8 mol% zirconia, 4 mol% yttria, and 1.2 mol% lanthana.” Other than relying on the opened ended ranges disclosed in Bruce for lanthana and yttria inclusion, the Office Action nowhere says where this “composition” is specifically taught by Bruce, as required by 37 CFR 1.104(c)(2). The allegation by the Office Action that Bruce “repeatedly gives 7 weight % (4 mole %) as an example of the amount of yttria added” is also not true with regard to those compositions comprising lanthana and yttria. In fact, and as shown by paragraph [0019] at page 3 of Bruce, the only example of a lanthana-containing composition provided by Bruce comprises 3-4 weight % yttria, an amount in mole % that is below the range now defined in amended 1-2, 6, 8-12, 16 and 18-25. In addition to failing to specifically disclose the currently claimed ranges of lanthana and yttria, Bruce also nowhere teaches the currently claimed mole % ratios of lanthana to total stabilizing component.

For at least the foregoing reasons, Claims 1-2, 6-12, 16-25, and 28, as amended, are novel over Bruce.

**B. Response to Rejection of Claims 1-2, 4-12, and 14-28 under 35 U.S.C. § 103(a) as Unpatentable over Bruce**

At pages 3-4 of the Office Action, Claims 1-2, 4-12, and 14-28 have again been rejected under 35 U.S.C. § 103(a) as unpatentable over Bruce.

Applicants respectfully traverse this rejection with regard to Claims, 1-2, 6-12, 16-25, and 28, as currently amended. As pointed out in part A of this amendment, and as conceded at page 3 of the Office, “Bruce does not give specific examples falling within the claimed range” with regard to the amounts of lanthana and yttria present in the zirconia-containing compositions. The teachings of Bruce are also inadequate to suggest the specific defined ranges of lanthana and yttria in amended Claims 1-2, 6-12, 16-25, and 28, and particularly the claimed mole % ratios of lanthana to total stabilizing component now defined in these amended Claims. These broad ranges of lanthana and yttria taught by Bruce are insufficient to suggest to one skilled in the art the specific ranges of lanthana and yttria, and particularly, the mole ratios of lanthana to total stabilizing component now defined amended Claims 1-2, 6-12, 16-25, and 28. In addition, the only specific lanthana-containing yttria-stabilized zirconia composition exemplified in paragraph [0019] at page 3 of Bruce teaches levels of lanthana and yttria below those now defined in the instant Claims, and would therefore not suggest the composition, article or method of amended Claims 1-2, 6-12, 16-25, and 28.

Page 3 of the Office Action again alleges that the claimed invention is obvious “because the compositional proportions taught by Bruce overlap the instantly claimed proportions and therefore are considered to establish a prima facie case of obviousness.” (Emphasis added.) But as noted above, it is inaccurate to characterize the compositional proportions taught by Bruce and the instantly claimed proportions to be “overlapping” with regard to the compositions, articles and method of amended Claims 1-2, 6-12, 16-25, and 28. Moreover, the cited case law in the Office Action assumes that there are “overlapping” ranges between what is disclosed in the art and what is claimed, which is currently not true. Accordingly, the Office Action’s reliance on the cited case law for establishing a prima facie case of obviousness is now misplaced.

The Office Action further alleges that it would be obvious “to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference.” (Emphasis supplied.) This presumes that one skilled in the art would have a basis in Bruce for “selecting” the currently claimed proportions of zirconia, yttria and lanthana, and especially the currently defined mole % ratio of lanthana to total stabilizing component. No such basis exists in Bruce for selecting the ranges and ratios now defined in the instant Claims. Far from being *prima facie* obvious, the compositions, articles and methods of amended Claims 1-2, 6-12, 16-25, and 28 are not taught or suggested by Bruce.

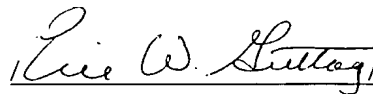
For at least the foregoing reasons, Claims 1-2, 6-12, 16-25, and 28, as amended, are unobvious over Bruce.

**C. Conclusion**

In conclusion, Claims 1-2, 6-12, 16-25, and 28, as amended, are novel and unobvious over the prior art relied in the Office Action. Accordingly, Applicants respectfully request that amended Claims 1-2, 6-12, 16-25, and 28 be allowed to issue in the above application.

Respectfully submitted,

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